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USSR Report

AGRICULTURE

No. 1245

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MAJOR CROP PROGRESS AND WEATHER REPORTING

CROP PEST FORECAST FOR BELORUSSIA

Minsk SEL'SKAYA GAZETA in Russian 12 Jun 80 p 3

[Article by P. Yas'kova, head of the Laboratory of Forecasts and Diagnostics for Plant Pests and Diseases of the Belorussian SSR Ministry of Agriculture, and N. Kharchenko, head of the Forecasts Laboratory of the Belorussian Scienfic Research Institute for ZR [expansion unknown]: "Appearance of Crop Pests Forecasted"]

[Text] The pronounced rise in temperature in the second week of June has activated the crop pests. Weevils and larvae of the dull carrion beetle and beet fleas have appeared on the sugar beet and fodder beet crops, and the beet leaf-miner fly has started to lay its eggs in the southern and central regions of the republic. The chemical treatments applied to the beet crops will now be effective in combatting the series of pests.

There is still a danger of serious damage to the late flax crops from the flax flea beetle, numbering 30-200 beetles per square meter, in the northern and central areas of the republic. These fields need immediate chemical treatment.

Mustard beetles have appeared on cabbages, turnips, rape and other cruciferous crops. The spring cabbage fly gravely threatens cabbages of the late and medium-late varieties because its intensive egg laying coincides this year with the period when the plants take root. The density of the pest is already over the threshhold for chemical treatments. The chemical treatments to combat the spring cabbage fly will also be effective against the mustard beetles.

The cabbage cutworm will begin to lay eggs during the fourth 5-day period in June if the warm weather persists in the central and southern regions. Preparations should be made for the appearance of the Trichogramma.

The marked rise in temperature intensified the flight of the Swedish flies, the number of which is great. Chemical weedings with the addition of an insecticide are expedient on such crops.

The Colorado beetle has begun to infest the potato shoots yhat have sprouted in the southern and central regions of the republic. A massive onset of the beetles and deposit of eggs are expected in the beginning of the second 10-day period of June. A greater concentration of the beetles is possible on tomatoes and potato shoots in the vicinity of storage piles and last year's potato heaps [kartoflyanishch], where chemical treatments to combat the beetles may become necessary. In case of warm weather there will be massive onsets of larvae in stages 1-3, and basic chemical treatments according to the forecast will be required in the first 10 days of July.

The flight of the codling moth has started in the southern and central areas, and it is expected to lay eggs at the end of the second 10 days. Preparations should be made for the onset of the Trichogramma.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

EQUIPMENT READY FOR HARVESTING--Odessa, 13 Jun (TASS)--The farms of Odesskaya Oblast finished refitting combines and staffing harvesting detachments today, having readied 3000 reapers and about 5000 combines for harvesting and threshing the grain. All of the equipment is concentrated in complexes and teams which were led by experienced specialists and machine operators and the machines were completely airtight. This year the farmers of the Black Sea area are to harvest leguminous and cereal grain crops from more than 800,000 hectares. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 14 Jun 80 p 1] 5186

FIELD OPERATIONS--Tselinograd--Sowing of grain crops was completed by the farmers of the largest Atbasarskiy Rayon. The commissions certified all fields to be of outstanding quality. The ad hoc party and komsomol groups formed in the systems, teams and units contributed to this success. They organized competition among machine operators for speed and high quality of sowing. Tbilisi--Harvesting and sowing machines went out together yesterday to the fields of Signakhskiy Rayon, Georgia's granary. The combines harvesting the barley were followed by seeders sowing corn. Nearly 5000 hectares will be occupied by sowing in patches in the rayon. Georgia's farmers have decided to finish reaping in 10-12 days. Minsk--Despite the weather the Belorussian farmers not only have expedited planting the fodder fields but also have essentially improved their structure, almost doubling the area in corn to 200,000 hectares. Sowings of lupine, alfalfa and clover were increased. This and advanced technology make it possible to produce 1.5 times more feed than last year. [Text] [Moscow TRUD in Russian 5 Jun 80 p 1] 5186

PLANT PROTECTION--Khmel'nitskiy, 9 Jun--For the first time machine operators of the oblast are making wide use of a herbicide in a mixture with ammonium nitrate in the care of grain fields. They are using tractor combines as well as agricultural aircraft to treat all 300,000 hectares of winter crops as rapidly as possible. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 10 Jun 80 p 1] 5186

SOWING FINISHED--Barnaul, 7 Apr--The Altay farmers finished sowing 5 million hectares in grain crops today. The machine operators had to work under difficult conditions. By day the temperature was 35 degrees but there was frost on the soil in the mornings. In order not to lose moisture, the fields had to be harrowed twice, with no delay between soi preparation and sowing. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 8 Jun 80 p 1] 5186

SOWING IN PROGRESS--Izhevsk--Combines are in wide use in sowing spring grain crops. Rapid rates and skill are the chief features of the current sowing work in Udmurtiya. The farmers of all rayons of the autonomous republic are now conducting mass sowing operations. An area of 300,000 hectares, or half the spring grain fields of the republic, have been sown. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 14 May 80 p 1] 5186

HELP FROM AVIATORS--Alma Ata, 10 Jun (TASS)--Agricultural airplane pilots are helping the farmers of Kazakhstan to produce more grain. Chemical weeding of wheat, barley and other grain crops started today on the farms of the steppe area. Treatment of crops with herbicides adds at least 1 quintal per hectare to the yields. Since nearly 14 million hectares will be treated, this means millions of tons of additional grain. Leaf-feeding spray of the winter wheat crops is being developed at the same time. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 11 Jun 80 p 1] 5186

GRAIN HARVEST NOTES FROM KAZAKHSTAN--The cutting and threshing of grain is going forth at a fast pace at enterprises in Chimkentskaya Oblast. Grain has already been gathered in from two-thirds of the sown area. This is almost 20,000 hectares more than on this same date last year. In several southern rayons in Chimkentskaya Oblast the grain harvest is already finished. Now the center of the grain harvest has shifted to the foothill and mountain zones of Lengerskiy, Algabasskiy, Leninskiy and Tyul'kubasskiy rayons. [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 11 Jul 80 p 1] Tselinogradskaya Oblast will sell, 2,052,000 tons of grain to the state. [Moscow IZVESTIYA in Russian 16 Jul 80 p 2 and Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 17 Jul 80 p 2] [Editorial Report] A short article reporting from Algabasskiy Rayon, Chimkentskaya Oblast, states that a majority of enterprises are getting 12 to 16 quintals of grain per hectare despite the fact that a sukhovey went through while the grain was in the milky-waxy ripening stage and that at the beginning of the harvest hurricane force winds [uragannyy veter] blew for a few days without interruption. [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 16 Jul 80 p 1]

HARVEST BEGUN--Baku, 10 Jun (TASS)--Mass grain harvest has begun in Azerbaijan. The leading farms of the Muganskiy and Mil'skiy steppes are reaping up to 35-40 quintals of barley per hectare. This harvest is a serious test for Azerbaijan farmers, who met their 5-year quota of grain sales to the state in 3 years. Now in expanding their achievements they are trying to bring the yield of each of the 500,000 hectares up to an average of 28-30 quintals of grain. Nearly all the allotted area is planted this year in intensive varieties of wheat, barley and corn, and the harvesting equipment was readied in good time. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 11 Jun 80 p 1] 5186

RICE FERTILIZED BY AIR--Simferopol'--In the largest rice growing oblast of the Ukraine they have begun extensive rice planting. For the first time agricultural planes are being used extensively to fertilize the rice fields. Large mechanized detachments are at work in the fields. Industrial enterprises have contributed equipment and personnel to the farms. In order to speed up work in the large areas on a number of kolkhozes and sovkhozes the planning of check plots is done in the water. All this is expediting sowing. The farmers have pledged to obtain up to 53 quintals of rice from each of the 20,000 and more hectares. [Text] [Kiev PRAVDA UKRAINY in Russian 4 May 80 p 2] 5186

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POST HARVEST CROP PROCESSING

DISCUSSION OF GRAIN PROCUREMENT IN KAZAKHSTAN

Moscow MUKOMOL'NO-ELEVATORNAYA I KOMBIKORMOVAYA PROMYSHLENNOST' in Russian No 1, Jan 80 pp 4-6

[Article by M. Dairov, minister of procurement of the Kazakh SSR: "The Components of Success on Kazakhstan's Grain Procurers"]

[Text] In consistently and purposefully implementing the measures on the realization of the historic decisions of the 25th CPSU Congress and the July 1978 Plenum of the CPSU Central Committee, the workers of Soviet Kazakhstan in 1979 achieved outstanding successes. They poured a record amount into the homeland's granaries--1,261,000,000 poods of high-quality grain, including over 1 billion poods of wheat.

These successes were marked by awarding Kazakhstan with the highest honor of the homeland--the Order of Lenin. A letter of greeting from the General Secretary of the CPSU Central Committee, Comrade L. I. Brezhnev, was directed at the Central Committee of the Kazakhstan CP, the Presidium of the Supreme Soviet of the Kazakh SSR, the republic's council of ministers, scientists, specialists, workers of party, soviet, trade union and komsomol organs and all workers of the Kazakh SSR.

The workers of grain-reception and grain-processing enterprises of the republic received the words of greeting from Leonid Il'ich Brezhnev with happiness and emotion, with a feeling of special pride about their participation in the fight for a large grain harvest in Kazakhstan.

Any victory, and especially one in which there have been great achievements, is not an easy one. The fight for grain on the 25th anniversary of the initial assimilation of virgin and long-fallow lands has not been an easy one. But the workers of the republic's procurement system were able to oppose all difficulties with the rich experience of many years, with selfless labor, and with the skilful use of the entire arsenal of organizational-technical resources for securing the uninterrupted reception and preservation of the rich harvest of the anniversary harvest in the Kazakh virgin lands.

In many grain-reception enterprises of the republic significantly more grain was received than there are storage facilities for. Thus, the Amankaragayskiy Elevator of Kustanayskaya Oblast received 191,000 tons of grain, the Kazakhstanskiy Elevator of Ural'skaya Oblast--200,000 tons, the Peskovskiy and Kzyltuskiy elevators of Kokchetavskaya Oblast--210,000 and 258,000 tons respectively, and the Arkalykskiy Elevator of Turgayskaya Oblast--240,000 tons of grain.

Under the difficult weather conditions of the current year the daily reception of grain at the Kzyltuskiy Elevator reached 12,000 tons. At the Kazakhstanskiy Elevator about 11,000 tons of grain were received and processed daily; at the Arkalykskiy Elevator--over 8,000 tons daily.

Despite the great intensity of work, the reception, processing and distribution of grain were completed in an organized manner on the whole and on a shorter schedule. The workers of all professions demonstrated their labor heroism. Greater socialist obligations were successfully fulfilled by Yekaterina Semenovna Kazakova, recipient of the USSR State Prize and master of grain drying of the Uritskiy Elevator in Kustanayskaya Oblast, Akylbek Abutalipov, brigade leader of the complex brigade on grain drying of the Kzyltuskiy Elevator in Kokchetavskaya Oblast, Anna Ivanovna Makrenchuk, grain dryer of the Tselinogradskiy Elevator, Vasiliy Petrovich Valiy, mechanic of the Kokchetavskiy Combine of Grain Products, Mariya Dmitriyevna Komar', laboratory technician of the Yesil'skiy Elevator of Turgayskaya Oblast, Vladimir Andreyevich Smizh, metal worker of the Amankaragayskiy Elevator in Kustanayskaya Oblast, Kulyash Besenbekova, laboratory technician of the Minskoye Grain-Reception Enterprise in Tselinogradskaya Oblast, Lyudmila Arkad'yevna Zubenko, laboratory technician of the Bulayevskiy Elevator of Severo-Kazakhstanskaya Oblast, Gul'sara Nurgaliyeva, machine operator of the Levoberezhnoye Grain-Reception Enterprise in Vostochno-Kazakhstanskaya Oblast, Ivan Ivanovich Gerlets, machine operator of the Uspenskiy Grain-Reception Enterprise in Pavlodarskaya Oblast, Kamalash Myktebelova, transporter of the Zhanaarkinskoye Grain-Reception Enterprise of Dzhezkazganskaya Oblast, Vladimir Yefimovich Sorokin, electrician in the Chkalovskoye Grain-Reception Enterprise of Kokchetavskaya Oblast, Nikolay Ivanovich Korneychuk, grain dryer of the Yavlenskoye Grain-Reception Enterprise and many others.

The foundation for the successful organization and completion of grain reception was laid much earlier. Last year all grain-reception enterprises in the republic demonstrated an organized approach toward the preparation of a material-technical base. The main thrust was directed at securing high quality in repair operations. In this a large role was played by extensively-developed socialist competition among repair brigades, shops, production sections, enterprises and oblast administrations of grain production. The victors of this competition were awarded challenge banners and prizes if they were brigades, shops or sections, challenge Red Banners of the administration of grain products and oblast committees of the trade union of agricultural workers if they were enterprises, honorary certificates of the Ministry of Procurement of the Kazakh SSR and the republic committee of the trade union of agricultural workers if they were oblast administrations of grain products. The course of preparations of the material-technical base in grain-reception enterprises for the reception of grain from the new harvest and the course of socialist competition for high quality repair work have been widely publicized in print, on radio and on television.

The Kustanayskoye, Turgayskoye, Kokchetavskoye, Tselinogradskoye, Alma-Atinskoye, Dzhezkazganskoye and Chimkentskoye administrations of grain products have repeatedly been awarded first place in socialist competition for the timely and high-quality preparation of a material-technical base. In the vanguard of competition were production leaders such as Georgiy Nikiforovich Albu, cavalier of the Order of Labor Glory of the 3d degree and master of grain drying at the Kzyltuskiy Elevator of Kokchetavskaya Oblast, and Zabira Kenzhevayeva, cavalier of the Order of Labor Glory of the 2d and 3d degrees and master of grain drying at the Uritskiy Elevator. Their example was imitated by thousands of workers within the procurement system.

High indicators were achieved in the work of electrical-welder N. N. Marchenko, metal worker P. P. Shtol' and electrician F. S. Sushchik of the Shortandinskiy Elevator in Tselinogradskaya Oblast, grain dryers N. G. Fink and A. M. Mal'sagova of the Tselinogradskiy Elevator, brigade leader of electricians A. M. Zvyagintsev of the Chemolganskoye Grain-Reception Enterprise of Alma-Atinskaya Oblast, grain dryer K. Tanatorov of the Kiyevskoye Grain-Reception Enterprise of Karagandinskaya Oblast, separators A. Dzhumatayeva of the Dzhusalinskoye Grain-Reception Enterprise of Kzyl-Ordinskaya Oblast, electrician K. M. Isopesko or the Ordzhonikidzevskiy Elevator of Kustanayskaya Oblast, grain dryer T. Talasov of the Mayskoye Grain-Reception Enterprise of Pavlodarskaya Oblast, machinist of unloading trucks V. R. Shutov of the Kokpektinskoye Grain-Reception Enterprise of Semipalatinskaya Oblast, grain dryer N. Akmagambetov of the Furmanovskiy Elevator in Turgayskaya Oblast, grain dryer I. S. Budenkov of the Dzhaltyrskiy Elevator in Tselinogradskaya Oblast and many others.

There was an overall organization of work on installing new and renovating existing truck unloaders with the goal of avoiding idleness by KamAZ trucks and tractor-trailer units during unloading operations. In the enterprises of the republic 126 new large-capacity truck unloaders have been installed and 1,642 have been renovated. This work was well organized in the enterprises of Tselinogradskoye, Severo-Kazakhstanskoye, Turgayskoye, Kokchetavskoye and Kustanayskoye administrations of grain products.

Special attention was given to introducing technical design for elevators and SOB's [Expansion unknown], as well as to the system of planned preventive repairs. In comparison with the preceding year, the number of elevators in which technical design has been introduced has increased by 23; of SOB's--by 15. At the present time 199 enterprises are using the PPR [Sceduled preventive maintenance] system for repair operations. We would like to note the exceptionally proper organization of the PPR system in the enterprises of the Kustanayskoye Administration of Grain Products.

One of the most important measures to preserve grain is drying. For this reason questions involving a growth in drying capacities and their effective utilization are at the center of attention of the collectives of the republic's enterprises. Work has been completed to renovate mine grain dryers and to convert them to the gas-recirculation method of drying. An isothermic regimen has been introduced, enabling us to increase the productivity of dryers by 20-25 percent. At the present time 62 percent of total drying capacities have been converted to the recirculation work regimen.

Last year alone 28 grain dryers were equipped with conical retarding elements in heating chambers and seven grain dryers were equipped with air chutes to provide auxiliary cooling of grain. With the goal of improving labor conditions and sanitary conditions 201 aspiration networks have been reconstructed. The speed of the lines on practically all transporters has been slowed down, and on 317 of them lines 650 millimeters wide and fluted rollers are used.

Within the complex of measures dealing with the preparation of a material-technical base, not only technical questions were discussed. There was also a consideration of problems related to improving the qualifications and training of cadres--laboratory workers, grain dryers, machine operators, electricians and others.

By the beginning of the grain harvest of 1979 7,140 individuals were trained in courses and directly in enterprises and 11,500 individuals received additional training.

With the goal of raising creative activity and improving the utilization of drying and grain-cleaning capacities, the board of the Ministry of Procurement of the Kazakh SSR, the presidium of the republic's trade union committee of agricultural workers and the republic's NTO [Scientific and technical association] administration conducted a competition among workers using grain dryers and separators for the title, "Best in his profession." The competition among laboratory workers has also become traditional. Practical experience has shown that such competition is a good school of progressive experience. In workers it stimulates a striving to improve their mastery and level of professional training.

A republic seminar-conference on the subject, "On Goals for Raising the Operational Level in Elevators and Grain-Reception Enterprises Arising From the Decisions of the July and November 1978 Plenums of the CPSU Central Committee," was conducted in the city of Arkalyke in Turgayskaya Oblast to better study, generalize and disseminate progressive experience. Participating in it were the directors and senior engineers of oblast administrations of grain products, the directors and senior engineers of the largest elevators in the republic, specialists of planning and scientific-research institutes and representatives of local party and soviet organs. In the course of the seminar its participants visited the Priishimskiy, Kenskiy and Arkalykskiy elevators, the collectives of which have achieved a significant amount of success in the matter of increasing technical design and the organization of scheduled preventive maintenance as well as of developing good living and cultural-domestic conditions for workers.

As a result of the realization of the aforementioned measures the republic's grain-reception enterprises completed the preparation of the technical base for the reception of grain from the new harvest 5 days ahead of schedule. The greatest success in this work was achieved by the enterprises of the Kustanayskoye, Turgayskoye, and Tselinogradskoye administrations of grain products. Deserving of the highest evaluation is the work on preparing technical bases performed by the collectives of the Priishimskiy, Kenskiy and Dzhanyspayskiy elevators of Turgayskaya Oblast, the Amankaragayskiy, Tobol'skiy and Uritskiy elevators of Kustanayskaya Oblast, the Dzhamantuzskiy and Kzyltuskiy elevators of Kokchetavskaya Oblast, the Makinskiy and Yerkenshilikskiy elevators of Tselinogradskaya Oblast as well as by hundreds of other grain-reception enterprises.

Over 21 million tons of capacities were prepared for the reception of grain, including 6,900,000 tons of elevator facilities, 29,500 area technical units with grain-dryer capacities, 3,600 truck unloaders and a great deal of other technology related to the reception and flow processing of grain.

The successful preparation of a material-technical base and all of the various operations that were completed prior to the shipment of grain from kolkhozes and sovkhozes has enabled the collectives of the republic's grain-reception enterprises to successfully deal with the reception of a record harvest of high-quality grain during the fourth year of the five-year plan.

The preliminary evaluation of the quality of wheat that is made by specialists from grain-reception enterprises and the state procurement inspectorate and from kolkhozes and sovkhozes in fields and on threshing floors has had a positive effect on the formation and distribution of high-quality grain. In the republic as a whole the preliminary evaluation of grain quality in the fields and on threshing floors encompassed about 70 percent of crops. This work was well-organized in Severo-Kazakhstanskaya, Kustanayskaya, Tselinogradskaya, Kokchetavskaya, Karagandinskaya, Turgayskaya and Aktyubinskaya oblasts.

Grain was received according to an hourly schedule by over 140 grain-reception enterprises in the republic and distributed according to technological charts by 400. All of this facilitated the fact that 70 percent of the total wheat was of high quality.

In addition to the successes in grain procurement in 1979 there were also some problems and basic shortcomings. In the republic there are still not enough dependable facilities to house all of the grain delivered to the state. Especially great deficits in capacity exist in the enterprises of Kustanayskaya, Tselinogradskaya,Severo-Kazakhstanskaya, Turgayskaya, and Ural'skaya oblasts, and in the republic as a whole they comprise over 8 million tons. It is our goal to completely eliminate the deficit of capacities for the reception and storage of grain in the near future.

At the same time, practical experience has demonstrated that the existing capacities for grain do not fully meet the necessary requirements. Model elevator designs call for one or a maximum of two flow lines for the reception of grain from trucks. This is not at all sufficient. For example, at the Zhelayevskiy Elevator of Ural'skaya Oblast, which was put into operation in 1977, the reception unit allows us to fill the capacities completely in no less than 90 days.

A problem in the technological lines is the capacity of grain dryers. Because of them it is virtually impossible to dry grain in the process of reception.

Another great shortcoming of model elevator designs is the low-productivity reception unit for railroad cars which uses transport equipment with a productivity of 175 tons per hour.

It is also necessary to mention the low effectiveness of utilizing separators, especially for cleaning rice grain. This equipment does not meet the requirements for flow-line grain processing, thereby incurring additional expenditures.

Under the leadership of local party and soviet organs the workers of elevators and grain-reception enterprises in the republic have done a great deal of intensive work to most rapidly complete the drying of moist and wet grain, to eliminate storage of bundles and to unload boxcars, thereby developing a dependable guarantee that all grain resources belonging to the state will be preserved.

The year 1980 is the 110th anniversary of V. I. Lenin's birth, the year for the preparations for the 26th party congress and for Kazakhstan's residents the year of the 60th anniversary of the formation of the Kazakh Soviet Socialist Republic and the Communist Party of Kazakhstan. There is no doubt that the workers of the republic's procurement system, as all of the Soviet people, will mark this date by new labor successes.

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POST HARVEST CROP PROCESSING

SUGAR CONTENT OF BEETS DISCUSSED

Moscow ZAKUPKI SEL'SKOKHOZYAYSTVENNYKH PRODUKTOV in Russian No 3, Mar 80 pp 28-29

[Article by A. Shengeriy, senior state inspector on the procurement and quality of agricultural products in Poltavskaya Oblast: "The Sale of Beets with a Consideration of Sugar Content"]

[Text] In the kolkhozes and sovkhozes of Poltavskaya Oblast sugar beets are the leading industrial crop, occupying 10.5 percent of the total sowing area. The monetary income from the sale of this crop is proportionally large and has a substantial effect on strengthening the economy of enterprises.

The resolution of the CPSU Central Committee and the USSR Council of Ministers, "On Measures to Further Increase the Production and Procurement of Sugar Beets and the Output of Sugar in 1976-1980," indicated ways to increase productivity, to further strengthen specialization and concentration in sugar beet production, to improve its quality and to decrease losses. During 4 years of the 10th Five-Year Plan the oblast's enterprises sold the state 18,773,000 tons of sugar beets as compared to the total volume of 16,530,000 tons. The average annual sale of sugar beets comprised 4,693,000 tons, which is 1,241,000 tons more than the average annual level for the Ninth Five-Year Plan.

In addition to increasing the yield of sugar beets, one of the most important factors in the intensification of sugar beet production is increasing sugar content. Everywhere in the country there has been a movement toward considering the sugar content of beets when deliverying them for sales. In Poltavskaya Oblast this type of method of receipt with additional payments for exceeding the base sugar content was realized in 1974 in the zone of the Globinskiy Sugar Plant.

Base sugar content on the average for the oblast during the last 5 years has been established at 16.57 percent. The kolkhozes and sovkhozes of the Globinskiy Sugar Plant sold sugar beets with a sugar content of 17.57 percent in 1974, which is 1 percent more than the base figure. Because of this the enterprises will receive a supplementary 303,600 rubles. The Kolkhoz imeni Michurin of Globinskiy Rayon alone was issued 26,000 rubles in supplementary payments for delivering sugar beets with a high sugar content.

Extensive organizational and practical work preceded the transition to receiving beets with a consideration of their sugar content. In the beet-reception stations of plants laboratories were reconstructed or new ones were built and eight semi-automatic ULS-1 lines were installed. A line is a complex of individual units designed to perform technical operations according to the sugar content of the beets.

The ULS-1 line is preferred because its use sharply raises labor productivity while determining sugar content in comparison to the manual method. Whereas a laboratory worker with average training can perform 4-5 analyses per hour, the line will perform 40. This enables us to institute systematic controls over the quality of all sugar beets received.

Beet-reception points without ULS-1 lines send samples of sugar beets by truck to plant beet-reception points in order to determine sugar content through analyses.

Sakhprom, the Poltavian sugar production-agrarian association, trained laboratory workers to use ULS-1 lines during the summer of 1974. An oblast seminar was held at the Oktyabr'skiy Sugar Plant to which were invited the senior agronomists of kolkhozes and sovkhozes, specialists of the rayon administration of agriculture, state inspectors of rayon inspectorates on the procurement and quality of agricultural products, the directors of raw materials departments of sugar plants, the directors of laboratories in beet-reception stations and specialists of a number of oblast organizations.

During the seminar a careful study was made of the State Standard 17421-72, "Sugar Beets for Industrial Processing," of the methodology for determining the sugar content of sugar beets using the ULS-1 lines as well as the manual method and of the provisional instructions on payments for sugar beets with high sugar content.

The seminars with state inspectors of rayon inspectorates on the procurement and quality of agricultural products have become a tradition. The oblast state procurement inspectorate does this regularly every year before starting to harvest sugar beets. As a result already in 1975 sugar beets were received with a consideration of sugar content and with supplementary payments for surpassing the base level in nine out of 10 sugar plants operating in the oblast at the time. During the various years sugar content comprised the following: 1971--14.8 percent; 1972--15.26; 1973--15.69; 1974--16.44; 1975--18.15; 1976--16.25; 1977--15.25 and 1978--16.43 percent. The sharp increase in sugar content in 1975 as compared with preceding years enabled oblast farms to receive an additional 887,000 rubles.

In addition to the building of new laboratories and to installing new Ryupro and ULS-1 lines in beet-reception points, the Poltavian production-agrarian association Sakhprom has continued its work to improve and renovate the old. At the present time such lines have been installed and are operating in 28 beet-reception points. In only two points--Galeshchanskiy and Umantsovskiy--the installation of these lines is still continuing. They will be operating in 1980.

It should be said that the sugar content of sugar beets of even one variety greatly depends on the introduction of organic and mineral fertilizers, on their correct combinations and on the schedule and methods of soil cultivation. Pre-sowing and post-sowing compaction, pre-shoot and post-shoot harrowing, the time at which the seed is sown and the density of the crop stand affect the sugar content of beets.

In order to increase sugar content it is very important to combat the beet weevil, click beetles, beet flea, and diseases, i.e. the sugar content in sugar beets depends on agrotechnical measures to a considerable degree.

In recent years the agrotechnical level of cultivating sugar beets has increased greatly in the enterprises of our oblast as compared with 1975. Kolkhozes and sovkhozes have become better equipped with soil-cultivational, sowing and harvesting technology, and there has been an increase in the quantity of mineral fertilizers that are applied in the proper proportions. Not accidentally the oblast's enterprises sold the state 4.9-5.2 million tons of beets raw materials for 3 years in a row until 1979. This data attests to a significant improvement in the complex of agrotechnical measures as compared with 1975, when the state was sold only 2,657,000 tons of sugar beets.

Weather conditions, in addition to agrotechnical measures, also have a noteable effect on raising the sugar content in beets. In 1975 all oblast rayons suffered from a severe drought and the yield of sugar beets was 166 quintals per hectare, which was 94 quintals less than the level of the preceding year, 1974. At the same time the sugar content increased to 18.15 percent, which was 1.71 percent higher than the 1974 level.

As we noted, the average base sugar content was determined from figures over the last 5 years, including the high sugar content of 1975. For this reason during all of the years of the 10th Five-Year Plan the oblast's kolkhozes and sovkhozes received insignificant supplementary payments for sugar content, with the exception of 1979.

In 1978 the oblast's rayons were again subjected to drought. In a number of rayons sugar content increased. In the zone of the Globinskiy Sugar Plant sugar content was above the base figure and the enterprises in the zone received an additional 165,600 rubles, whereas the Kolkhoz imeni Michurin received 15,700 rubles, the Kolkhoz imeini Gor'kiy--12,500 and the Leninets--17,300 rubles.

The enterprises of Lubenskiy Rayon received an additional 131,700 rubles, including 12,500 for the Kolkhoz imeni Lenin and 5,500 rubles for the Druzhba. The enterprises of Lokhvitskiy Rayon received an additional 49,800 rubles, including 7,200 for the I Travnya Kolkhoz, 7,300 for the Rossiya and 3,800 rubles for the Zarya Kommunizma.

It is essential to note that the existing system of payments for sugar beets according to physical weight does not provide incentives for enterprises to produce a high quality crop. For this reason, when the provisional instructions were introduced the incentives for enterprises to produce beets with a high sugar content grew because the instructions establish that when selling root crops with a sugar content above base level for each 1 percent above base a bonus of 1 ruble per ton of sugar beets is paid.

The methodology for determining base sugar content has not yet been perfected. If during the preceding 5 years there is one dry year which must be included in the calculations of base sugar content then during the next five-year plan enterprises will not receive bonuses for a high sugar content unless there is another dry year.

The state must alter the calculations for base sugar content in order to improve the material incentives of enterprises to upgrade the quality of beets sold to the state.

In considering the experience of beet farmers and workers of the sugar industry in Yampol'skaya Oblast we feel that the best system of reimbursement for sugar beets should be based on the sugar content in the beets by weight. This type of system of reimbursement would raise the incentive of enterprises to cultivate better-quality beets. Sugar plants would be more careful in storing beets, in processing them and in taking measures to fight sugar losses.

At the present time all laboratories and all specialists working in laboratories to determine the qualitative indicators of sugar beets are under the jurisdiction of sugar plants. With such a situation it is possible to understate the quantity of beets received by overstating the general weed infestation, by decreasing sugar content, etc. Thus, during the 1979 procurement operations the inspectors of oblast and rayon state inspectorates on the procurement and quality of agricultural products frequently found cases of overstatement of overall infestation, incorrect weighing of trucks carrying sugar beets, and overstatement of indicators for packaging in trucks. As a rule, on inspection day in a number of beet-reception points overall infestation of sugar beets is significantly lower than in preceding days and sugar content is much higher.

In our opinion it would be proper to subordinate the laboratories either to the USSR State Committee on Standards or to the USSR Ministry of Procurement, but not to the organization that is procuring sugar beets.

At the November 1979 Plenum of the CPSU Central Committee, the General Secretary of the CPSU Central Committee and the Chairman of the Presidium of the USSR Supreme Soviet, Comrade Leonid Il'ich Brezhnev, focused a great deal of attention on the quality of agricultural production. "However, we must admit," he said, "that until now kolkhozes and sovkhozes have not given the necessary amount of attention to this factor. Apparently, they are not provided with sufficient incentives to fight for high quality production and for its preservation." This applies to sugar beets as well.

The sale to the state of beets with a consideration of their sugar content is becoming more widespread in our country. However, there are still many difficulties and unsolved problems here. But we can already say with certainty that further improvements in payments for sugar beets will raise the incentive for enterprises and beet farmers to upgrade the quality of this valuable product.

The editors request workers of state procurement inspectorates and procurement organizations of beet-farming oblasts in the country to express their opinion on the questions discussed in this article.

The most interesting proposals and comments will be published in the magazine.

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POST HARVEST CROP PROCESSING

PROBLEMS IN RSFSR SUGAR BEET PROCESSING

Moscow SOVETSKAYA ROSSIYA in Russian 18 May 80 p 2

[Article by the raid brigade, consisting of A. Rusanova, unit leader of the Serp i Molot Kolkhoz; V. Veselov, inspector of the oblast committee of people's control; N. Demidov, Kursk-Moscow: "Bitter Sugar"]

[Text] Within the system of a single production complex a special role is played by processing enterprises. In recent years the Yampol'sk method has become widespread in the republic. With this method beet farmers and workers of the sugar industry take on joint obligations. Cooperative agreements require coordination and interaction. Breakdowns in the work of one of the partners will result in the disruption of work in the next link of the technological chain. The material from today's raid reflects some of the reasons for the problems.

It is time to make repairs in the sugar mills of Kurskaya Oblast. Equipment is being adjusted and production capacities are being increased in many enterprises. Last year sugar refiners pledged to produce almost 300,000 tons of sugar, but actually produced only 227,000 tons. Of course, the small beet harvest in kolkhozes and sovkhozes and its poor quality had a lot to do with this. However, sugar losses occurred not only on fields during the harvesting period but also during the processing of the harvest. It turned out that many enterprises were simply not in a condition to dependably store raw materials in reception points or to productively utilize mechanisms.

The Kollektivist Sugar Mill remained idle for 12 days during the most intensive period of the season. Tens of tons of sugar were underproduced solely because of this.

"We were let down by the overhead cable for removing bagasse," says the director of the enterprise A. D. Novikov. "It broke down at the most intensive work period, production stopped, and the transported beets collected and rotted."

The method of defectless repairs has been employed at the plant for more than 1 year. Brigades that service their equipment receive guaranteed registration certificates. How could it happen that on the eve of the sugar-refining season, when the guarantees were issued, when bold reports of complete readiness were circulated, the situation in enterprises still turned out to be difficult?

"This overhead cable was wearing out and soon became completely useless," said the brigade leader of repair workers, V. I. Yesipov. "Three years ago it became clear that the equipment would soon break down. Decisions had to be made on the replacement of works. But the administration of the mill did not listen to our advice."

A. D. Novikov is inclined to say that what happened was totally accidental, but as we see, this is not quite the case. "Objective" difficulties arise every season as well. Either the equipment breaks down or there are problems with the operation of the new TETs [Heat and electric power plant]. After all, at one time the enterprise was considered to be one of the most exemplary, dealing successfully with no less intensive tasks. What has been done to ensure that the same shortcomings do not appear again this year?

Technologists already have a great deal to think about in order to avoid losses of raw materials and to improve production output. Last year each quintal of raw materials produced 10 kilograms of sugar, which was 2 kilograms below plan. A resource that is not utilized is the use of damaged beets in production, although by doing this alone in one season it is possible to produce about 100 tons of sugar additionally. There are considerable losses of produce during the storage of the roots comprising 3 percent of the total mass. Beets are still moved by bulldozers along fields that are not equipped with storage pits. Concrete platforms have been needed for a long time, but building is proceeding very slowly. This is explained by the absence of material and specialists, although in Kurskaya Oblast there is a mechanized mobile column for these purposes.

An entire series of problems arose at another sugar mill--imeni Karl Libknekht. Here the output of sugar per quintal of mass is still lower--8 kilograms. This season shops remained idle for almost 2 months! The kolkhozes and sovkhozes, especially those of Fatezhskiy Rayon, were the first to create problems. The beets were shipped from the fields behind schedule, the roots remained in clamps for long periods of time and rotted. All of this resulted in the fact that instead of producing 25 quintals of sugar per hectare, half this amount was produced. The basic factors involved in causing the lags remain today. It turns out that errors are planned for. The mill foresees losses of raw materials in its reception points instead of seeking out ways to eliminate them. Actually, the ways to do this are common knowledge--accelerating the concreting of platforms, the installation of modern equipment, training cadres better. But it is precisely in this area that work is slow and poor.

Here, for example, is how the highly productive lump-sugar Shambon line is utilized. In January the equipment was idle for 20 days. Either there was no auxiliary material or mechanical failures took place. The complex, expensive equipment is serviced by random people and this is the reason for the defective lines and the violation of technology. For many years already the enterprise has been suffering from a shortage of cadres. During the first months of the season only 50-60 percent of the needed workers are available. And now, during the period of repair services, many brigades are not full.

"We would be able to recruit the necessary cadres quickly," says the mill director, V. P. Drushlyakov. "But during the last 10 years there has been no construction here of residential and social and domestic facilities."

In the Ministry of the Food Industry of the RSFSR this explanation was called an elementary excuse since the funds for the construction of a 70 square foot house were allocated long ago.

In other enterprises of the sugar industry in Kurskaya Oblast the use coefficient of capacities also remains low. The average daily productivity in beet processing last year was below plan here and the idleness of shops is the greatest in the RSFSR. Work is particularly poor in the Krivetskiy, Deryuginskiy and Olymskiy sugar mills. Here is another alarming figure. Last season beet losses during storage comprised 180,000 tons in the oblast, or more than 7 percent of the total amount received for processing. We heard many explanations for this--unfavorable weather conditions, a small beet harvest, a low sugar content in the roots. But what is the experience of the Plant imeni Kalinin? Under the same conditions it achieved a significant growth in sugar production and in curtailing losses.

The main reasons lie elsewhere. The business contacts of specialists of sugar mills, raw materials services and beet-reception points with the agricultural administration and directly with sovkhozes and kolkhhzes are still weak. The Yampol' method demonstrated what should be done long ago. Unfortunately, its implementation is proceeding slowly. Not only in Kurskaya, but in many other oblasts, actual cooperation between beet farmers, drivers and workers of the sugar industry is replaced by formal contracts which are not fulfilled by any of the parties. Only the Kuban', Voronezhskaya and Belgorodskaya oblasts, have achieved the precise cooperation of all links in the beet conveyor. This is why the operation of sugar mills there is stable.

"Yes, the contacts between partners in many rayons are still undependable," agrees V. N. Teodorovich, director of Rossakharprom [Russian sugar industry association]. "It is difficult to count on the contracts that are concluded between farms and our enterprises. It is more advantageous to kolkhozes and sovkhozes to deliver beets not according to sugar content but by gross output because the plan is established with a view to the gross production of this crop. Thus there is little interest in moving the roots rapidly from the fields. In 1980 we plan to alter the system of receiving raw materials in all plants--we will receive it only according to its sugar content.

The necessity of such measures emerged long ago. In a number of oblasts, including Kurskaya, there is now a tendency to decrease the sugar content in beets. Whereas during the Ninth Five-Year Plan, for example, 1 quintal produced over 16 kilograms of sugar, during the last 4 years it has yielded only 15 kilograms.

Of course the complaints of sugar refiners against agricultural workers are justified. But the enterprises themselves still have done very little to combine beet production and processing into a single complex. In Rossakharprom we were shown blank contracts for cooperation in 1980. When they are filled out, each line of obligations will not show only numbers. It will also reflect the interrelationship of partners who are called upon already today to solve many of the existing problems.

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POST HARVEST CROP PROCESSING

DECREASING LOSSES IN SUGAR INDUSTRY

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 6 Sep 79 p 1

[Article by N. Talalay, Cherkassy: "Decreasing Losses"]

[Excerpt] The workers of the sugar industry greeted the resolution of the CPSU Central Committee and the USSR Council of Ministers, "On Additional Measures to Secure the Scheduled Harvesting, Shipment and Processing of Sugar Beets for the 1979 Harvest," with satisfaction.

Sugar refiners know well that the shorter the period of beet processing, the greater the sugar output and the lower the cost. For the 23 plants of the Cherkassysakhprom [Cherkassy sugar industry association], for example, decreasing the period of sugar refining by 10 days meant about 6,000 tons of additional products.

At the beginning of the five-year plan Cherkassy sugar workers took on the obligation of decreasing the processing season by 10 days by 1980. How would this be done? After all, the building of new enterprises was not planned, meaning that there would be no growth of production capacities. Specialists from the association, together with workers of Ukrsakhproyekt [Ukrainian planning association for the sugar industry] examined each enterprise in detail and came to the conclusion that by means of technical reequipping and renovation it would be possible to increase capacities in existing mills by 5,380 tons of processing daily in the course of the five-year plan. This is equivalent to the introduction into operation of two new enterprises with average capacities. The republic's ministry of the food industry approved these goals and confirmed a plan for organizational and technical measures in each plant. How is the implementation of the plan taking place?

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POST HARVEST CROP PROCESSING

INNOVATIONS IN GRAIN ELEVATOR CONSTRUCTION DESCRIBED

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 21 Jun 80 p 1

/Article by V. Kanin, chief engineer of the Yuzhelevatormel'stroy Trust: "Elevators Rise in the Steppe"/

/Text/ The decisions of the 25th CPSU Congress envisage a rise in the technical level of capital construction. Elevator building especially needs an improvement in equipment and production technology and a wide use of the brigade contract.

From the beginning of this five-year plan the Yuzhelevatormel'stroy Trust has attained quite good indicators. Construction and installation work worth more than 100 million rubles has been done and capacities for a simultaneous storage of 654,000 tons of grain have been put into operation. Owing to a close cooperation with scientists, many scientific and technological achievements have been introduced into practice.

A further increase in the construction of silage buildings with prefabricated parts is one of the potentials for reducing labor expenditures. Now we use four types of fully prefabricated foundations. They have been used successfully in the construction of elevators in Semipalatinsk and Taldy-Kurganskaya Oblast.

The construction of a silage building of a capacity of 50,000 tons, the largest in the country, has begun recently. It is also built on prefabricated foundations. All the structural solutions included in this experiment meet modern requirements connected with a rise in the productivity and quality of labor and with a reduction in material intensiveness.

Usually, a grain receiving center presupposes many individual buildings and structures. If they are unified, areas and materials are saved considerably, the commissioning of projects is accelerated and their operation is facilitated. Our workers at the construction of the Zhangiz-Tobe elevator proposed that the office building be blocked with the auxiliary-subsidiary building, fire station, scales and laboratory. Gosniisredazpromzernoproyekt developed an efficient individual plant. The blocked building will be finished soon. The administrative-domestic building at the Zholaman elevator is built by the same method.

The trust personnel made a big commitment--to build at the Zholaman station the first elevator with a structural protection of joints in Kazakhstan and to submit it for the award of the State Badge of Quality. The new structural solution caused considerable difficulties with the planning of new parts and the placement of orders.

To increase the output of elements with a structural protection of joints, it is advisable to have a specialized flow line for the manufacture of reinforcing nets and cages and for shaping. Incidentally, this would make it possible to also avoid difficulties during the introduction of other innovations.

An experiment in the installation of large-size prefabricated floor slabs developed by TsNIIpromzernoproyekt for silage buildings has been conducted at the trust recently. These slabs have been used in two solid buildings in Dzhalagash in Kzyl-Ordinskaya Oblast, which made it possible to greatly simplify the dismantling of the sliding form, to move it with large blocks together with the working floor and, therefore, to install it at the next project much more rapidly. Precast reinforced concrete nonsagging tracks for all types of tower cranes have also been developed. As a result, the cost of track installation has been reduced to one-third of the previous cost.

During the construction of the Kapchagay Mill, a change was made from solid to prefabricated floor slabs. They make it possible to assemble building frames continuously for the entire height, including in winter.

The introduction of all these innovations made it possible to attain two main goals--to shorten the periods and to improve the quality of construction. However, we believe that the new technology can bring a significant yield only when the engineering support for projects and the creation of the necessary conditions for people are not forgotten.

Our projects are provided with warehouses and "rastvornyye uzly" residential settlements with the necessary conveniences for people have been established near construction projects and their transportation to the place of work has been organized efficiently. For 10 years we have been establishing construction sites with a high standard of production and way of life. We have become convinced in practice that only such a standard closely connected with improved equipment and technology can ensure stable advances. The personnel attained a solution of this problem in the construction of the Kapchagay Grain Product Combine, the Zholaman elevator and other projects.

All this contributes to the creation of a good labor mood, owing to which the trust personnel are concluding the 10th Five-Year Plan successfully and trying to create a good start for the 11th Five-Year Plan. We are confident that we will meet the 60th anniversary of the republic and of the Communist Party of Kazakhstan with new labor victories.

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POST HARVEST CROP PROCESSING

BRIEFS

GRAIN ELEVATOR IN KAZAKHSTAN--Kustanay, 2 Jul (TASS)--The entire harvest grown by virgin land developers in one of the country's largest granaries will receive a safe roof. The Peshkovskiy elevator, the largest in North Kazakhstan, was put into operation in Kustanayskaya Oblast. Fully prefabricated structures were widely used in its construction. Specialized brigades carried out installation with enlarged blocks. The virgin land "skyscraper" is designed for the storage of 150,000 tons of grain. All the operations have been fully mechanized and automated. Powerful unloading devices have been installed. They make it possible to receive heavy-freight motor vehicle trains without delay. From the beginning of the five-year plan large facilities for the storage of grain have been put into operation in Kzyl-Orda, Dzhambul, Kapchagay and a number of other places. This year alone the capacity of elevators in the zone between the Irtysh River and the Ural River has increased by almost 750,000 tons. More than 700 modern enterprises in Kazakhstan will now receive the harvest of the concluding year of the five-year plan. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 3 July 80 p 1] 11,435

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LIVESTOCK

DEVELOPMENT OF LIVESTOCK PRODUCTION REVIEWED

Moscow POLITICHESKAYA SAMOOBRAZOVANIYE in Russian No 6, Jun 80 pp 123-128

[Article: "Development of Animal Husbandry -- An Important National Economic Task"]

[Text] The complete and mutually coordinated solving of tasks and the extensive use of systems of economic and organizational measures aimed at achieving improvements in all branches of agricultural production -- this is a typical feature of the modern agrarian policies of our party. Special attention is being given at the present time to the development of animal husbandry. The solving of this task, as emphasized during the July (1978) Plenum of the CPSU Central Committee, requires the concentrated attention of the entire party, ministries and departments, kolkhoz and sovkhoz leaders and all rural workers so that, by increasing the number of animals and raising the productivity of all types of livestock and poultry in all areas and as rapidly as possible, a conversion can be made over to intensive methods for managing animal husbandry and for transforming it into a modern and highly efficient branch.

During the period following the March (1965) Plenum of the CPSU Central Committee which, as is well known, laid the foundation for the modern agrarian policies of the CPSU, definite successes were achieved in animal husbandry. A considerable increase took place in the volume of capital investments directed towards the development of this branch of agriculture. The farms of kolkhozes and sovkhozes and also livestock complexes began receiving greater shipments of the required machines and mechanisms. As a result, labor expenditures for the production of meat, milk and other products decreased and the working conditions of the workers improved. The party devoted a great amount of attention to the economic levers available for improving animal husbandry. In particular, the procurement prices for many types of livestock products were raised and this made it possible to raise the profitability of their production. All of this led to an increase in the yield of the principal types of livestock products.

As you can see, the growth achieved in terms of all indicators was impressive. Nevertheless, the present production volume for livestock

Production of Livestock Products
(at all categories of farms; annual averages)

	1961-1965	1966-1970	1971-1975	1976-1979
Meat (in dressed weight), millions of tons	9.3	11.6	14.0	14.8
Milk, millions of tons	64.7	80.6	87.4	93.2
Eggs, billions of units	28.7	35.8	51.4	61.9
Wool, thousands of tons	362.0	398.0	442.0	458.0

products is insufficient. This is explained by steady improvements in national welfare and by growth in the monetary income of workers. Let us take a look at the appropriate data.

The average annual wages of manual and office workers increased from 1,149 rubles in 1965 to 1,962 rubles in 1979. The income obtained by kolkhoz members from the public economy during this period increased from 11.5 billion rubles to 18.9 billion rubles. At the same time, the number of kolkhoz members fell from 18.6 million to 13.8 million individuals.

Considerable improvements took place in payments and privileges extended to the population from the public consumption funds. Compared to 1965 when they amounted to 182 rubles per individual, by 1979 they had increased to 417 rubles. The growth in the overall income of workers is borne out by a sharp increase in savings bank deposits. In 1965 the population had approximately 19 billion rubles deposited in savings banks and in 1979 -- 146 billion rubles.

Naturally, such rapid growth in the monetary income of the population has brought about a sharp increase in the demand for high quality and high calorie food products -- meat and meat products, milk and products made from milk and eggs. It must also be borne in mind that our retail prices for all of these products have remained unchanged.

But the rates for increasing the production of many livestock products, although they are rather high, are still lagging noticeably behind growth in population income. Thus the production of meat throughout the country increased from 10 million tons in 1965 to 15.5 million tons in 1979, that is, by 55 percent. Milk production was 72.6 million tons and 93.3 million tons respectively (an increase of 29 percent. Egg production in 1965 was 29.1 billion units and in 1979 -- 65.6 billion units, or 2.3 times more.

Certainly, it does not follow from the above that our consumption of livestock products is at a low level. For example, in 1979 the per capita consumption of milk and dairy products (in a computation for milk) was 319 kilograms. This was a high level. In terms of this indicator, we occupy a leading position in the world. In the U.S.A., for example, the per capita consumption of milk in 1978 was only 247 kilograms, in Italy -- 205 kilograms and in Japan -- 69 kilograms. We also surpass a majority of the developed countries in terms of egg consumption (233 eggs per capita).

In terms of overall meat production volume, our country occupies second place in the world (15.5 million tons in dressed weight) behind the U.S.A. (26 million tons) and we surpass such countries as France (5.4 million tons), the FRG (5.1 million tons) and England and Italy (3 million tons each). But in per capita meat consumption (average of 58 kilograms per individual), the USSR still lags behind these and a number of other states. "The primary obligation of leaders of the agricultural branch and local party and soviet organs, specialists and all animal husbandry workers is that of achieving a considerable increase in meat production throughout the country" stated Comrade L.I. Brezhnev during the November (1979) Plenum of the CPSU Central Committee.

Animal husbandry is a complicated and labor-consuming branch of agriculture. Fifteen to twenty years ago, productive livestock were distributed on small kolkhoz and sovkhoz farms, the overwhelming majority of which were not mechanized. For the most part, use was made here of heavy physical labor. The productivity of the animals was low. Naturally, these factors tended to restrain the development of animal husbandry.

Following the March (1965) Plenum of the CPSU Central Committee, a program was pursued aimed at accelerating improvements in animal husbandry and developing it in an intensive manner. The party developed and is consistently implementing a complex of measures in this regard. This includes specialization and concentration of agricultural production based upon interenterprise cooperation and agroindustrial integration, the gradual conversion of the production of livestock products over to an industrial basis, the creation of a stable feed base, improvements in the technology and methods employed for feeding animals, improvements in the maintenance conditions for livestock and poultry and the development of selection and breeding work.

In 1978, 5.57 billion rubles were expended for the construction and equipping of livestock facilities, or 2.4 times more than the amount expended for this purpose in 1965. Thousands of new farms and complexes were built. In 1979, there were more than 3,260 sovkhoz, kolkhoz and interenterprise complexes for the production of livestock products in operation throughout the country. In 1979, they produced and sold to the state 995,000 tons of pork (in live weight), 814,000 tons of beef and 3.1 million tons of milk.

Many kolkhozes and sovkhozes are carrying out the conversion of animal husbandry over to an industrial basis through the expansion and modernization of existing farms. The equipping of these farms with modern machines and equipment is making it possible to intensify more rapidly the production of meat, milk and other livestock products. Moreover, the working conditions of the livestock raisers are being improved considerably. Their labor is becoming more skilled in nature and this is promoting the retention of workers on the farms. Many establishments in Moscow, Khar'kovskaya, Kiyevskaya, Penzenskaya and a number of other oblasts have elected to modernize their livestock farms. During this modern stage, the modernization and expansion of kolkhoz and sovkhoz farms represent one of the main trends in the conversion of animal husbandry over to an industrial basis.

A special branch of industry has been created in the country for producing machines for animal husbandry and feed production. As a result, a sharp improvement has taken place with regard to ensuring that the farms are supplied with modern equipment. It is sufficient to state that during this present five-year period the workers in animal husbandry and feed production will be supplied with roughly the same number of machines and items of equipment as were supplied during the two previous five-year plans taken together.

The level of mechanization of farm operations has been raised. For example, in 1965 only 27 percent of the cows were milked mechanically and in 1978 -- 88 percent. Such laborious work as the issuing of feed on the farms and large-horned cattle complexes was mechanized to only three percent in 1965 and in 1978 -- 39 percent; at pig raising farms the figures were 11 and 62 percent respectively and at poultry farms -- 15 and 80 percent. The level of mechanization for work carried out on farms and at large-horned cattle complexes in connection with the removal of manure from facilities increased from nine to 69 percent, at pig raising facilities -- from 12 to 83 percent and at poultry raising facilities -- from seven to 83 percent.

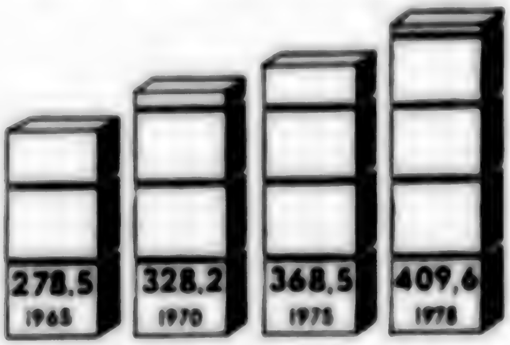
In essence, the logistical base at all animal husbandry kolkhozes and sovkhozes has been strengthened substantially in recent years. However, the desired results are still not being obtained on many farms. Growth in the production of livestock products is lagging behind increases in the branch's fixed productive capital. The principal causes of this situation are the low productivity of public animal husbandry and the weak beed base. Thus, a study of the status of animal husbandry on farms in the central and northwestern regions of the RSFSR has shown that existing livestock and their genetic potential make it possible at the present time, using the same facilities and the same personnel, to increase the production of meat and milk by a factor of 1.5-2. But this requires the production of adequate quantities of diverse types of high quality feed.

During the July (1978) Plenum of the CPSU Central Committee, Comrade L.I. Brezhnev noted: "Everything that we wish to obtain from animal husbandry -- greater quantities of meat, milk and other products -- is in the final analysis dependent upon adequate quantities of diverse and high quality feed being available." In each oblast there are farms which have created a strong feed base, thus making it possible for them to develop animal husbandry in a successful manner. One such farm is the Razdol'ye Sovkhoz in Leningrad Oblast. During the 1976-1978 period, the production of feed here increased by 77 percent. Each hectare of meadow land furnishes 36-50 quintals of hay and 320 quintals of fodder are obtained from three cuttings of a hectare of perennial grasses. All of the hay at the sovkhoz is pressed and dried out using forced ventilation. The coarse feed is stored in specially equipped facilities. A strong feed base has made it possible to realize considerable improvements in the feeding of the animals and to obtain 5,306 kilograms of milk from each cow, at a time when the average milk yield per cow, for the country as a whole during 1978, was only 2,259 kilograms.

However, feed production is increasing very slowly on many farms. Quite often the leaders and specialists attached to kolkhozes, sovkhozes and agricultural organs view feed production as a secondary branch. The worst lands are frequently set aside for the forage crops, fertilizers are applied in insufficient quantities and serious violations are tolerated in the agricultural practices employed in cultivating them. Seed production work is organized in a weak manner, the schedules for harvesting the forage crops and grasses are prolonged to an excessive degree and this results in a considerable lowering of the quality of the feed being procured, in a shortfall in the harvest and in losses.

As a result, the expenditure of feed for one conventional head of cattle (at all categories of farms) amounted to only 26.9 quintals of feed units in 1978, compared to 24.8 quintals in 1970. This level is low and inadequate for carrying out livestock fattening work on an intensive basis or for raising their productivity in rapid fashion.

Expenditure of Feed for Livestock and Poultry
(at all categories of farms; millions of tons; in a conversion for feed units)



The creation of a stable feed base assumes definite proportionality in the development of field crop husbandry and animal husbandry. Only upon this condition will it be possible to ensure adequate quantities of feed for the livestock and develop field crop husbandry in a more intensive manner, using organic fertilizers obtained from animals.

Recently, on many farms, a large portion of the production type investments have been employed directly for developing animal husbandry and the smaller portion -- for feed production. Such has been the situation in the nonchernozem zone of the RSFSR and in Tambovskaya, Belgorodskaya and a number of other oblasts. Moreover, of the resources used for animal husbandry, the principal bulk was employed for the construction of facilities. Only a small portion of these resources was used for improving breeding operations or the strain structure of the herd, erecting feed preparation shops on the farms and so forth. As a result and despite that the availability of capital for animal husbandry had increased considerably, no significant increase was achieved in the productivity of the farms and the branch developed mainly on an extensive basis. A large number of livestock complexes which lack a reliable feed base are unable to maintain the planned number of livestock and thus operate on a half-empty basis.

It is known that the cost of feed expended for the production of a unit of livestock output constitutes the greatest proportion of the production cost structure. For example, an average of more than 10 tons of meat are produced daily at a complex engaged in the raising and fattening of 10,000 head of young large-horned cattle stock. In the process, more than 100 tons of diverse types of feed are consumed. The experience of many kolkhozes and sovkhozes and also interenterprise associations reveals that the large farms and complexes must be surrounded by highly intensive farming zones having developed feed production operations and suitable enterprises for the processing of raw materials and the preparation of feed based upon a progressive technology.

A most important national economic task at the present time is that of increasing the production and raising the quality of the feed. Feed is presently considered to be equally as important as grain, cotton and sugar beets. Thus the attitude towards the feed fields, pastures and haying lands must be the same as that being displayed towards the plantings of wheat, cotton and beets.

Certainly, the task of achieving a considerable improvement in the feeding of animals is by no means an easy one. At the present time, there are roughly 340 million head of livestock and more than 950 million head of poultry belonging to kolkhozes and sovkhozes and to the population.

Number of Productive Livestock
(at all categories of farms; millions of head; on 1 January)

	1966	1971	1975	1980
Large-horned cattle	93.4	99.2	111.0	115.0
including cows	39.3	39.8	41.9	43.3
Pigs	59.6	67.5	57.9	73.7
Sheep and goats	135.3	143.4	147.1	149.2
including sheep	129.8	138.0	141.4	143.4

On many farms an attempt is made to compensate for a shortage of livestock feed through the excessive use of grain and quite often at the expense of state resources. In 1978, the livestock and poultry were fed 146 million tons of concentrated feed, compared to only 65 million tons in 1965 (an increase of 2.2 times), while at the same time the consumption of coarse feed increased by only 47 percent (from 164 million to 241 million tons), succulent feed -- by 46 percent (from 417 million to 611 million tons) and pasture feed increased only negligibly (from 373 million to 380 million tons).

Experience has shown that a powerful industry for the production of high quality hay, haylage and silage should ideally be created. This is the aim of the March 1980 decree of the CPSU Central Committee and the USSR Council of Ministers entitled "Additional Measures for Increasing the Production of Coarse and Succulent Feed During 1980 and Raising Their Quality."

It is mentioned in the decree that in recent years the production volumes for coarse and succulent feeds have not been satisfying the increasing requirements of animal husbandry. Measures for developing the feed base, prepared during the July (1978) Plenum of the CPSU Central Committee, are still not being carried out in a sufficiently energetic manner. Many farms are not fulfilling their feed production plans and in a number of oblasts the average annual feed procurement volumes during the current five-year plan have even decreased or increased only negligibly compared to the Ninth Five-Year Plan.

The rural workers and the party, soviet and agricultural organs have been assigned the task of increasing as quickly as possible the yields of hay, haylage, silage and root crops. The volumes of the impending work, associated as it is with the production and procurement of feed, are great. It is sufficient to state that the kolkhozes and sovkhozes must lay away for the impending winter, for the public herd and also for the privately owned livestock, more than 77 million tons of hay and 263 million tons of silage, compared to only 46 and 176 million tons in 1979. The plans call for straw procurements to be increased from 70 million to 115 million tons and fodder root crops and melon crops -- from 20 million to 58 million tons.

The need has been recognized for converting feed production over to an industrial basis and attaching to it a specialized branch character in all areas. "The need for creating modern feed production operations as a specialized branch of the national economy has become completely obvious today" emphasized Comrade L.I. Brezhnev, "This task is of great state importance."

On farms where the production of all types of forage has been transferred over to specialized subunits, the feed fields and natural lands are being used most effectively. For example, the experience of Vinnitskaya Oblast is familiar to all. Here the party and soviet organs, with the assistance of scientists, developed a complex plan for the development of feed production during the 1980-1985 period and they have already commenced implementing this plan. A specialized subunit for the production of feed is being created on each farm in the oblast and its logistical base is being strengthened. By 1985 the plans call for forage procurements to be increased to 38.5 quintals of feed units per head of livestock, compared to only 31.2 quintals in 1979. Such efficient, scientifically sound complex programs have also been developed and are being implemented in Leningrad, L'vovskaya, Kiyevskaya and a number of other oblasts.

A most important reserve for the creation of a feed base is that of a proper structure for the areas sown in forage crops. This implies that those feeds which make it possible to obtain a maximum amount of feed units per hectare of land should be grown in conformity with the specific soil-climatic conditions found in the rayons and on the farms. Accordingly, improvements are also required in the types of feeding for the livestock.

Over the past few years, the structure of feed production operations has been organized radically at the Nazarovskiy Meat and Dairy Sovkhoz in Krasnoyarskiy Kray. Earlier, a preference was shown here for growing corn for silage, with the principal portion of the organic and mineral fertilizers being used for this crop. But this crop did not furnish stable or high yields owing to a shortage of warmth and moisture. An average of 8.1 quintals of feed units was obtained from 1 hectare of corn planting. Annual grasses were also sown for hay purposes at this farm, but their yields were low -- 6.2 quintals of feed units were obtained per hectare.

The areas on which annual grasses and corn are grown at the sovkhoz have been reduced considerably. Grains for feed purposes were grown in their stead, with the crops being harvested during the stage of milky-waxy ripeness. The minced bulk is stored away in lined trenches. This made it possible over the past 5 years to raise the yield of feed units to 23 quintals per hectare of planting. Such a change in the feed production operations made it possible to improve sharply the feeding of the livestock and to raise their productivity substantially. The average daily weight increase for the cattle over a 5 year period was 903 grams and the milk yield per cow in 1978 was 3,204 kilograms.

The effectiveness of animal husbandry output production is dependent to a considerable degree upon the animals being supplied throughout the year with biologically rich feed and in a uniform and continuous manner. Fluctuations in the level and quality of feeding tend to disrupt the balanced nature of the feed rations and thus lower the output of products. The quality of the feed is dependent upon the development of selection and seed production work, upon the agricultural practices employed in the growing of feed crops, upon the periods for harvesting them and upon the extensive introduction into operations of those technologies recommended by science for the preparation and storage of feed.

Special importance is presently being attached to the problem of eliminating the deficit in feed protein. In addition to causing a shortfall in livestock products, the deficit in protein components also results in a 30-35 percent over-expenditure of feed for the production of beef and 20-25 percent for the production of pork.

What causes this deficit in feed protein? There are several causes. First of all, the productivity of the forage crops and the natural feed lands is low. In addition, considerable nutrient losses occur during the feed procurement and storage processes (up to 30 percent and more). Up until now, growth in the production of feed was achieved mainly by expanding the plantings of silage crops, mainly corn in its pure form and annual grasses, which contain very little protein. And finally, considerable amounts of cereal crop grain, which is unbalanced in terms of its protein content, is being used as livestock and poultry feed.

The situation that has developed can be corrected to a considerable degree by expanding the plantings and raising the productivity of high protein crops, especially those which serve as sources for valuable protein additives during the production of mixed feeds (pulse crops, perennial leguminous grasses, sunflowers and others) and also by increasing the production of feeds of animal origin (milk and dairy waste products, blood and bone meal, fish meal and others).

Our most widely used high protein crop is peas. A considerable increase in its production is possible through the introduction of modern mechanized cultivation technologies in each soil-climatic zone. However, priority importance is being attached to soybeans with regard to solving the protein problem, the grain of which contains 40 percent or more of protein. However, we are still not devoting proper attention to the growing of soybeans. The yields are not very great. Only 634,000 tons of soybeans were obtained in 1978. On the other hand, soybean production in the U.S.A. is in excess of 40 million tons.

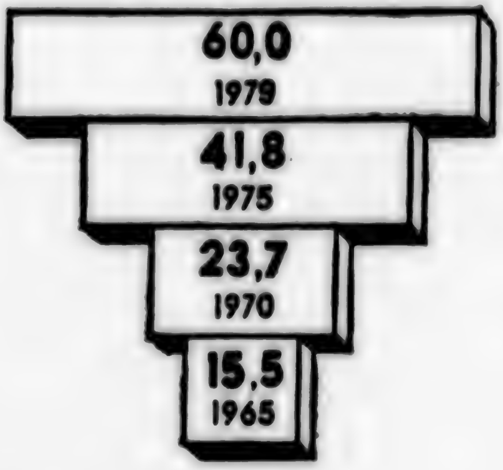
Within the USSR, there are zones having favorable conditions for the production of soybeans. Here we have in mind mainly the Far East, where this crop has been cultivated since olden times. The farms in this region are obtaining 12-14 quintals of grain per hectare and some even as high as 15-16 quintals. In a computation for protein, this corresponds to a wheat yield of 40 quintals.

Soybeans can be grown on irrigated lands in the southern Ukraine, Moldavia, the north Caucasus, the Volga region, souther Kazakhstan and in the Uzbek, Kirgiz and Azerbaijan republics.

The Odessa Progress Kolkhoz is engaged in the production of soybeans. Last year, more than 35 quintals of beans were obtained here from each of 170 hectares. This year the area used for soybeans has been expanded considerably. Soybeans are being grown in Krymskaya Oblast. In

Krasnogvardeyskiy Rayon, for example, almost 27 quintals of soybeans are being obtained per hectare and throughout the Crimea as a whole -- 18.6 quintals. This year the oblast's soybean plantings are being increased by more than twofold. Importance is being attached to disseminating this experience and actively introducing soybean production in other regions of the country.

Improvements in the nutritional value of the feed are greatly dependent upon the development of the mixed feed and microbiological industry. Recently, special attention has been given to this problem. The capabilities of the state mixed feed plants have been increased and the mixed feed industry is developing on an interenterprise basis. These two factors are bringing about an increase in the production of mixed feeds. During the 1965-1979 period, the production of mixed feed increased by a factor of almost four.



Mixed Feed Production
(millions of tons)

At the present time, a considerable quantity of grain forage, cake and oilseed meal is by-passing the mixed feed industry and being fed to livestock. This constitutes direct losses of valuable nutrients. Specialists in Donetskaya Oblast have estimated that the development of the interkolkhoz mixed feed industry has made it possible to raise the protein content in each feed unit of forage procured by 18 grams. Compared to the use of grain forage in its pure form, a savings of more than 70,000 tons of concentrates was realized.

Unfortunately, the quality of the mixed feeds still does not meet the requirements of the standard in all areas. The recipes for preparing the mixed feeds are not being followed and this leads to a reduction in the productivity of the animals and to over-expenditures of feed.

The intensive raising and fattening of livestock presupposes the availability of scientifically sound feed rations. Only on this basis will the use of nutritionally rich feed produce the greatest results. This is why such importance is attached to supplying the livestock with feed that has been prepared in advance. A modern feed preparation shop makes it possible to influence in an active manner the quality of feed through the use of many physical, chemical and biological factors. It has been established that the well organized operation of a feed preparation shop makes it possible to improve the use of feed by 20-25 percent and to raise its nutritional value. A clear example of this is the work carried out by two feed preparation shops at the Saad'yarve Kolkhoz in Yygevaskiy Rayon in the Estonian SSR. One of these is used for the heat treatment of coarse feeds and the other -- for the yeasting of concentrates. As a result of the yeasting process alone, the protein content in a feed unit increases from 70 to 85 grams. In carrying out the yeasting of 8,000 tons of meal, the shop will additionally produce almost 120 tons of protein and this is a worthy addition to the feed rations.

But adequate attention is not being given to the feed preparation operations in all areas. Large quantities of straw and succulent and other types of feed are still being fed to the livestock without any preliminary preparation. For example, inspections were carried out at 283 large-horned cattle farms in Pskovskaya Oblast during the autumn of 1979. It turned out that only nine percent of the coarse feed and 11 percent of the silage were processed prior to being fed to the livestock. This led to over-expenditures of the feed, it restrained growth in the productivity of the livestock and it lowered the effectiveness of meat and milk production.

The party is calling upon all rural workers to do everything possible to ensure that the year 1980 serves as a turning point with regard to feed production and, it follows, accelerating the development of animal husbandry. Under the direction of the party organizations, the collectives of livestock raisers are striving to do everything possible to ensure the fulfillment and over-fulfillment of their planned tasks and socialist obligations for increasing the production and sale of livestock products to the state during the final year of the Tenth Five-Year Plan.

7026
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REGIONAL DEVELOPMENT

IMPROVEMENT IN CONSTRUCTION OF RURAL SETTLEMENTS IN KAZAKHSTAN URGED

Moscow STROITEL'NAYA GAZETA in Russian 14 May 80 p 3

/Article by A. Bektemisov, chairman of the Kazakh SSR State Committee for Construction Affairs: "Plus Local Initiative"/

/Text/ In Kazakhstan in the last 20 years the number of villages has decreased by more than one-third. Their total population has increased, although less than one-half of the republic's population now lives in rural areas. Regional planning diagrams and projects have been developed for all oblasts and almost all administrative rayons. They reflect the problems of economy, settlement, territorial planning and engineering equipment. The long-term list of rural settlements was determined on the basis of these projects. Two-thirds of these projects are built according to the approved master plans.

As a result of the implementation of the overall program for the transformation of villages, dwelling houses of a total area of about 15 million square meters and a large number of clubs and libraries have been built in the last 10 years and the number of children's institutions has more than doubled. The system of medical and municipal-domestic services for the public has been renewed considerably. A great deal has been done to provide rural settlements with water, sewer systems, gas, electric power and heat. The republic's better settlements--Burevestnik in Kustanayskaya Oblast and Kaplambek in Chimkentskaya Oblast--for outstanding plans and for the construction carried out according to them were awarded prizes of the USSR Council of Ministers. The settlements of the Kazakh Scientific Research Institute of Farming imeni Vil'yams in Alma-Atinskaya Oblast, Krasnyy Yar in Kokchetavskaya Oblast and Malinovka in Tselinogradskaya Oblast are noted for high-quality construction.

To develop the principles of formation of a new type of rural settlement, 16 experimental model settlements of kolkhozes and sovkhozes are being planned and built. They are located in almost all the basic natural and climatic zones of Kazakhstan. A construction program defining the objects and tasks of the experiment and the volumes of work with an annual breakdown has been developed for each such settlement and is being realized.

These programs have been most fully embodied on the Karagandinskiy Sovkhoz (the settlement Dzhartas) in Karagandinskaya Oblast, the Trudovoy Pakhar' Sovkhoz (the settlement Akzhar) in Dzhambulskaya Oblast, the Zhdanovskiy Sovkhoz in Severo-Kazakhstanskaya Oblast and the Tselinnyy Sovkhoz and the Kazakhstan Sovkhoz in Chimkentskaya Oblast. Dwelling houses were built there according to individual plans with improved apartments for different family structures. In the Akzhar settlement of interest is the public trade center, where the house of domestic services has been combined with a self-service store and the building of the rural soviet, with a communication center.

After the central part is built, the Zhdanovo settlement will have a full complex of institutions for cultural and general services: A club for 400 places, a combine for domestic services with a restaurant, a hostel for people with small families, an administrative building, a trade center, a pioneer palace with a swimming pool and a school. All the streets and approaches to houses have been asphalted in this settlement established during the period of virgin land development. The planting of greenery is under special control and is executed according to a special plan of the rural soviet. Up to 30,000 trees, as well as decorative shrubs and flours, are planted there annually. All the conditions for the management of private subsidiary farms have been created in this settlement. There are private plots and farm buildings. As a result, all the 466 families keep large-horned cattle.

What are the results of the course of construction throughout the republic? A total of 67 out of the 500 sovkhoz and kolkhoz settlements that took part in republic and all-Union review competitions for the best planning, building and civic improvements of rural settlements were given the awards of the Exhibition of Achievements of the National Economy of the USSR.

In the republic preparations are now being made for the next--sixth--stage in the all-Union review competition. The board of the Kazakh SSR State Committee for Construction Affairs approved organizational and technical measures for holding intraoblast and republic review competitions for the best construction and civic improvements devoted to the 60th anniversary of Kazakhstan. On the basis of their results a display is to be organized at the Exhibition of Achievements of the National Economy of the Republic this year. All this will make it possible to more widely popularize the advanced experience in the construction of villages.

Nevertheless, we are by no means fully satisfied with the course of construction of experimental settlements. There are still unsolved problems, which hamper the rates of construction. Many of them are characteristic not only for our republic. Yu. Bukin, deputy chairman of the RSFSR State Committee for Construction Affairs, and Ya. Rubins, chairman of the Latvian SSR State Committee for Construction Affairs, discussed them in STROITEL'NAYA GAZETA. We subscribe to their point of view: There is a need for a centralized allocation of material and technical resources and for the planning by contracting organizations of the volumes of construction and installation work in experimental model settlements.

Of course, a great deal also depends on local initiative. In particular, we have to do a great deal to improve the quality of rural housing. As yet we use a limited number of existing standard house plans. It happens that residential buildings are also erected according to obsolete plans. This leads to uniform construction. The best standard plans for rural residential and public buildings are not introduced into practice rapidly.

The institutes of the Kazakh SSR State Committee for Construction Affairs, taking into consideration the existence of a base for large-panel house building, natural stone (shell rock) and gas and silicate concrete structures, have now developed plans for one- and two-story houses with the use of these parts. Series of standard plans for individual one- and two-story houses with increased areas of summer accomodations, kitchens and halls have been issued. A number of plans for dwelling houses with a complex of farm structures have been developed.

We pay much attention to the planning of housing for regions with dust storms. Documents envisage the creation of internal yards, a favorable exposure of the windows of main living rooms and a unification of large summer accomodations into one-veranda-loggia.

There are plans for experimental dwelling houses made from in situ concrete with the use of a large-panel form, wooden glued structures, vibrated brick three-layer wall panels the size of a "room" and claydite concrete wall panels with the M-50 concrete brand.

Basically, during the 11th Five-Year Plan the buildings for cultural and general purposes will be made from unified structures of the II-04 and IIB-04 series, as well as from block structures of the "17" series.

An overall program for drawing up new and amending obsolete projects for the planning and construction of villages has been outlined. It is designed for the period until 1986 and envisages the reworking of all master plans drawn up before 1971. This is due mainly to the fact that there was an extremely weak planning base in the republic 10 years ago. The quality of architectural solutions adopted at that time does not meet present requirements.

The local initiative of kolkhoz and sovkhoz farms, discipline of builders, constant control by the State Committee for Construction Affairs and other directive bodies and centralized solution of the urgent problems suggested by life will help to successfully implement the program for the transformation of villages and to create favorable conditions for the work and rest of rural workers.

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CSO: 1824

TILLING AND CROPPING TECHNOLOGY

ADVANCES OF PROMISING OIL, FEED CROP: RAPE

Moscow SEL'SKAYA ZHIZN' in Russian 5 Jun 80 p 2

[Article by V. Peresypkin, corresponding member of the All-Union Academy of Agricultural Sciences imeni V.I. Lenin, Kiev: "Expand Rape Plantings"]

> [Text] Rape is a valuable oil and feed crop. The yield of bulk green matter reaches 500 quintals per hectare and more. One hundred kilograms of rape contains three kilograms of digestible protein and 16 kilograms of feed units. One hectare of rape enables bees to gather 90 kilograms of honey. It is urgent for us to assemble as much rape seed as possible to expand plantings next year.

In connection with the growing demand for vegetable fats and proteins in many countries of the world, the cultivation of winter and spring rape has received more attention. It is considered the leading essential oil crop in some countries. At the present time rape is fifth among all oil crops with respect to volume of production of vegetable oil and protein. According to an FAO forecast, world production of rape seed in 1985 will reach 12 million tons. Rape oil is used extensively for human food and industrial purposes. Erucic acid is used in the production of nylon.

Plant breeders in Canada and the Western European countries have done a great deal in recent years to develop new varieties of winter and spring rape containing more oleic and linoleic acid, but without erucic acid. With respect to food qualities such oil is equivalent to olive oil. The oil cake remaining after the rape seed is processed for oil is a valuable source of protein for animals.

Rape can also play an important part in strengthening the livestock feed base. Its green parts are rich in protein, many vitamins, calcium, phosphorus, sulfur, and other minerals. One hundred kilograms of rape greens at 80 percent moisture contain up to three kilograms of digestible protein and 16 feed units. It is no accident, therefore, for people to think that rape green matter produces as many feed units per hectare as alfalfa.

The value of rape as a feed plant lies in its succulence, good digestibility, and low cellulose content. Rape silage has more protein and less cellulose than silage made from corn, sunflower, or Jerusalem artichoke. Its sugar content is double the established minimum. A valuable grass meal can be prepared from dried rape greens harvested in the budding-flowering phase.

Raising rape within the system of growing livestock feed makes it possible to get full-value fodder in the early spring and late autumn periods. It grows back well after mowing and grazing. Rape for livestock feed may be cultivated together with peas, oats, rye, and ryegrass. These mixed plantings produce bulk greens that are rich in protein and carbohydrates.

The flowers of the rape plant contain a great deal of nectar, so this crop is considered a good honey plant and permits bees to gather up to 90 kilograms of honey per hectare.

Rape is a good forerunner for grain crops, in particular wheat. Raising rape in the fieldcrop rotation or planting it as green manure causes a sharp decrease in root rot in wheat and barley.

Seed fields should receive special attention from farm managers and specialists. Their area has been greatly expanded this year. Raising a high seed yield and reliably storing the harvest will guarantee a significant increase in rape production next year.

It should also be observed that more winter rape for livestock feed has been planted this year in the Ukraine, Stavropol'skiy and Krasnodarskiy krays, and Latvia. They have now begun crop management work.

Many farms operating under conditions of adequate moisture and making use of advances in science and progressive practice are receiving 450-500 quintals of bulk greens per hectare, while in the zone of inadequate moisture the yield is 250-300 quintals. Irrigated rape fields produce 650-700 quintals per hectare. The seed yield often reaches 30-35 quintals per hectare with oil content of as much as 45-48 percent in certain varieties.

The Kolkhoz imeni Chkalov in Gorodokskiy Rayon of Khmel'nitskaya Oblast harvested an average of 26.8 quintals of Mytnitskiy-2 winter rape last year from a 10-hectare area. One hectare of Vasil'kovskiy spring rape at the Siberian testing station of VNIIMK [All-Union Scientific Research Institute of Oil Crops] in Omskaya Oblast produced 527.9 quintals of bulk greens with a protein content in absolutely dry matter of 27.2

and 24.5 quintals of seed with a protein content in absolutely dry matter of 33.3 percent.

Unfortunately, many kolkhozes and sovkhozes still are not giving proper attention to raising rape, and therefore they often get poor yields. Sometimes complete fields are lost. To avoid such things farmers must know the special characteristics of raising this valuable crop, the things that must be taken into account to get a good yield.

Rape develops well on aerated, prepared neutral or weakly alkaline soils which have adequate quantities of calcium and sulfur. It can endure salinity in fields, but acid marsh soils and dry sandy soils are considered unsuitable for it. The best forerunners for rape are legume and grain crops. One rape crop should not be planted after another; the crop can be replanted on the former field after 4-5 years.

Preplanting tillage and moisture retention in the soil are very important to receive even sprouting and good plant development. After harvesting the previous crop, therefore, fields must be scuffled and then deep plowed in regions with adequate moisture or deep plowed with a chisel plow (without a mold board) in regions of inadequate moisture. Before planting the soil is treated with treflan (2.5-4 kilograms per hectare) and harrowed for weed control; rolling is also important in fields designated for winter rape.

Rape removes more mineral elements from the soil than grain crops. Therefore, an essential condition for getting a good yield is applying the necessary nutrients to the rape crop according to agrochemical soil analyses. Lime is recommended before plowing or when disking stubble after harvesting the forerunner, while other mineral fertilizers should be applied just before or during planting. Half of the nitrogen fertilizer should be applied before planting and half during. This helps prevent the development of root bacteriosis and makes the plants more winter-hardy.

When seeds are placed at a depth of 2-3 centimeters and the plantings are compacted by heavy ring rollers, sprouts appear on the third or fourth day. But the young plants need a great deal of heat and light. Therefore, winter rape should be planted 20-25 days before the optimal time for planting winter wheat. Spring rape is planted in the spring immediately after planting early grain crops when the soil temperature is 10-12 degrees. In the southern parts of the country it can also be planted in the summer for livestock feed.

The best way to plant rape seed fields is with 45-centimeter interrow spaces. This makes it possible to work the soil once on the seventh or eighth day after the appearance of sprouts and again at the beginning of the budding stage. Crops raised for oil and fodder are planted solidly. The planting rate depends on the size of seeds and time and method of planting. It may vary from six to 10 kilograms per hectare. According to figures from Czechoslovakian and Polish scientists, the winter-hardiness of winter rape is improved when fields are treated one month after the appearance of sprouts with the chemical CCC (TUR) at 6-8 kilograms per hectare. They also note an increase in yield and oil content of seeds without worsening their market qualities. In the spring, when new leaves are beginning to appear on winter rape, top dressing with nitrogen and harrowing are effective cultural practices.

Pests often cause substantial losses of rape. Among the chief problems are cabbage flea, rape borer, aphids, cabbage stem weevil, rape curculio, seed weevil, and a few others. An effective control measure against these pests is spraying fields with 30 percent metafos (0.7 kilograms of the chemical per hectare) or 80 percent khlorofos (1.5 kilograms per hectare).

In winter and spring rape fields being raised for fodder it is usually important to protect the plants against cabbage fleas and the rape borer. Therefore, one treatment with insecticides between the eighth and 12th day after sprouting is adequate. Fields designated for seed are given a second chemical treatment against several other pests (aphids, rape curculio, and others) at the end of the budding stage. The plants cannot be sprayed during the flowering period because this may kill bees and entomophages.

The most harmful rape diseases are considered to be wire stem, downy mildew, and black spot, in addition to root bacteriosis in winter rape. The Mytnitskiy-2 winter rape variety has increased resistance to root bacteriosis and downy mildew.

Rape is harvested for green feed at the end of the budding stage or in the beginning of plant flowering. Delaying the harvest will reduce the quality of the crop. The harvest for seed purposes begins when most of the pods have turned brown. It is best to use the swath method of harvesting to avoid losses. To minimize seed droppage and crushing it is best to do the thrashing in the morning using well-prepared grain combines with lowered drum RPM's and the deck dropped. After thrashing the seeds must be dried immediately on the thrashing floor and brought to 10-11 percent moisture. If this is not done they will mold and lose their ability to germinate.

In conclusion I would like to express my desire that plant breeding work be intensified to develop new high-yielding varieties of winter and spring rape with increased resistance to disease and good technological qualities. It is important to improve the winter-hardiness of winter rape.

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